AXMINSTER
POWER TOOL CENTRE

AWDWSG 150/200mm Wetstone Grinder

User Manual

700249

AXMINSTER
WHITE

Axminster Reference No:**AWDWSG**

www.axminster.co.uk

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SAFETY!!

The symbols shown on the cover of this manual advise that you wear the correct safety protection when using this machine.

Safety Protection Symbols

AXMINSTER WHITE

AXMINSTER POWER TOOL CENTRE

Copied from CE Certificate

The undersigned, [redacted] authorised
by Yancheng Baoding Electrical Tools Co., Ltd.
No. 88 Yandu Road, Yandu New District 224005
Yancheng P.R. China declares that this product:

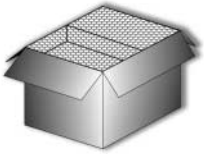
MD150/200Q

Bench Grinder

manufactured by Yancheng Baoding Electrical Tools Co. is in compliance with the following standards or standardisation documents in accordance with Council Directives

EN 61029-1/A12:2003
EN 61029-2-4/A1:2003

What's in the Box...



1 No.	150/200mm Dry and Wetstone Grinding Machine with grinding wheels fitted	Model no. MD150/200Q
1 No.	Combined Eye Shield/ Spark guard	
complete with:-		
1 No.	M5 Phillips Head Screw	
1 No.	5mm Washer	
1 No.	5mm Spring Washer	
1 No.	M5 Nut	
1 No. Tool Rest		
complete with:-		
1No.	M6 Plastic Star Knob	
1 No.	M6 Coach Bolt	
1 No.	6mm Washer	
1 No.	6mm Anti-vibration Washer	
1 No.	Rubber Bung/Stabilising Leg	
Tool Jig Assembly		
1 No.	Tool Jig	
1 No.	Tool Jig Support Bar & Nut	
1 No.	Guarantee Card	
1 No.	Instruction Manual	

Good Working Practices/Safety

The following suggestions will enable you to observe good working practices, keep yourself and fellow workers safe and maintain your tools and equipment in good working order.

WARNING!! **KEEP TOOLS AND EQUIPMENT OUT OF THE REACH OF YOUNG CHILDREN**

Mains Powered Tools

Primary Precautions

These machines are supplied with a moulded 13 Amp. Plug and 3 core power cable. Before using the machine inspect the cable and the plug to make sure that neither are damaged. If any damage is visible have the machine inspected/repaired by a suitably qualified person. If it is necessary to replace the plug, it is preferable to use an 'unbreakable' type that will resist damage on site. Only use a 13 Amp plug, and make sure the cable clamp is tightened securely. Fuse as required. If extension leads are to be used, carry out the same safety checks on them, and ensure that they are correctly rated to safely supply the current that is required for your machine.

WARNING!!

If the machine is not fitted with an NVR type ON/OFF switch, always check that the machine is OFF before connecting it to the mains supply.

THIS MACHINE IS FITTED WITH A SAFETY SWITCH FOR YOUR SAFETY

Work Place/Environment

The machine is designed for indoor operation, do not use when or where it is liable to get wet. If the machine is to be used outside and it starts to rain, stop work and move it inside. If the machine has got wet; dry it off as soon as possible, with a cloth or paper towel. Do not use 230Va.c. powered machines anywhere within a site area that is flooded or puddled, and do not trail extension cables across wet areas. Keep the machines clean; it will enable you to more easily see any damage that may have occurred. Clean the machine with a damp soapy cloth if needs be, do not use any solvents or cleaners, as these may cause damage to any plastic parts or to the electrical components.
Keep the work area as uncluttered as is practical, this includes personnel as well as material.

Under no circumstances should CHILDREN be allowed in work areas.

Work Place/Environment Continued

If the machine is not permanently fixed in place, it is good practice to leave the machine unplugged until work is about to commence. Also make sure to unplug the machine when it is not in use or unattended. Always disconnect by pulling on the plug body and not the cable. Once you are ready to commence work, remove any tools used in the setting operations (if any) and place safely out of the way. Re-connect the machine.
Make sure you are comfortable before you start work; balanced, not reaching etc.

If the work operation appears to be excessively noisy, wear ear-defenders.

If you wear your hair in a long style, wearing a cap, safety helmet, hairnet, even a sweatband, will minimise the possibility of your hair being caught up in the rotating parts of the machine, likewise, consideration should be given to the removal of rings and wristwatches, if these are liable to be a 'snag' hazard. Consideration should also be given to non-slip footwear, etc .It is **NOT** recommended that gloves are worn when carrying out grinding operations, there is a definite loss of 'touch', if the work piece gets very hot, dowse frequently in the cooling pot.

If you are allowing another person to use the machine, ensure that they are suitably qualified to do so.

DO NOT use any tools or machinery if you are under the influence of drink, drugs or prescribed medication.

DO NOT work with abrasive tools of any description if you are tired, your attention is wandering or you are being subjected to distraction. A deep graze, a ground fingertip or worse is not worth it!

DO NOT use this machine within the designated safety areas of flammable liquid stores or in areas where there may be volatile gases. There are very expensive, very specialised machines for working in these areas, **THIS IS NOT ONE OF THEM.**
Above all, **OBSERVE....** make sure you know what is happening around you, and **USE YOUR COMMON SENSE.**

Carefully unpack the machine and all the loose items from the box. Check the contents against the "What's is in the box" list. If any items are missing please contact our technical services department using the telephone numbers that you will find in our catalogue.
Having removed all the items from the box, please dispose of your unwanted packaging responsibly. A lot of the packaging is biodegradable.
Initially we suggest that you merely carry out a 'loose' assembly of the various parts of the grinder. After assembly has been completed we will set up the various components correctly and tighten securely.
Identify the Tool Rest, and secure it to the inside face of the wheel cover using the coach bolt/star nut and washers provided. (See fig 1)

Hand tool rest

Bolts/star nuts

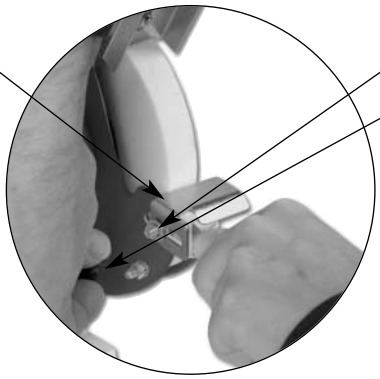


Fig 1

Identify the Eye Shield/ Spark Guard and fit to the hard point on the top of the stone cover part of the guard, using the M5 screw etc, provided. (See fig 2)
Identify the rubber bung/stabilising leg and press home into the hole in the base of the water trough. (See fig 3)

Fig 2

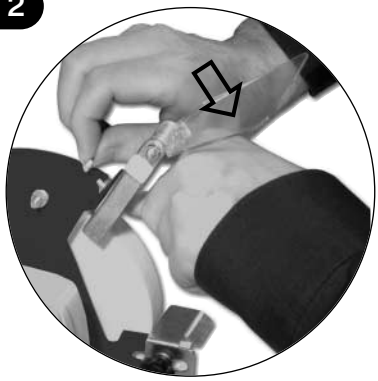
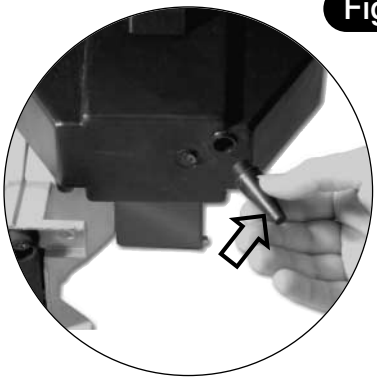
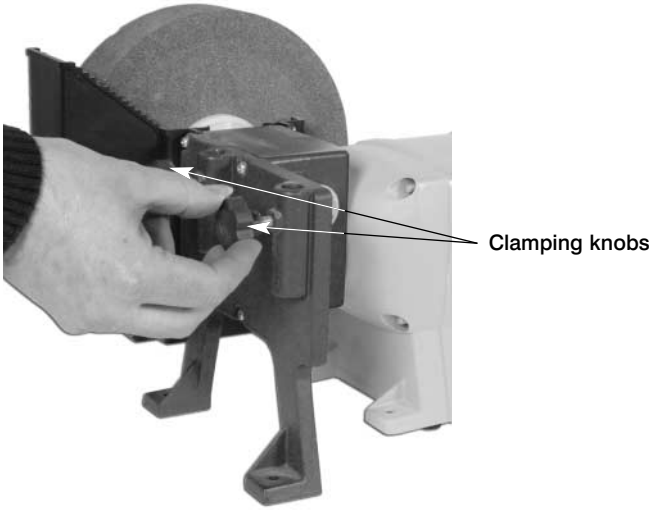


Fig 3



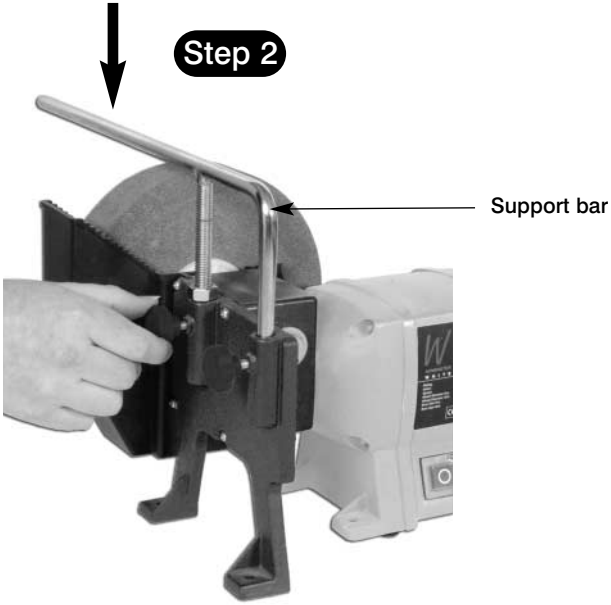
Tool Jig Assembly

Step 1



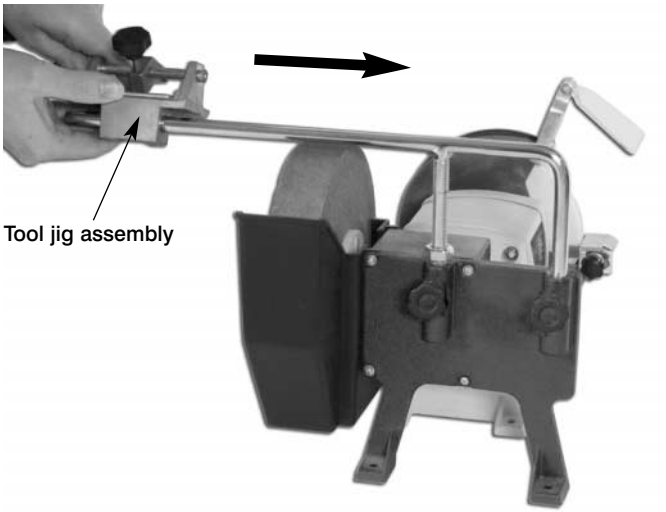
Step 1. Undo and loosen the two clamping knobs on the cast iron support.

Step 2



Step 2. Locate the support bar, lower the two rods into the holes in the cast iron support. Tighten the clamping knobs to secure the support bar in place.

Step 3



Step 3. Mount the Tool Jig assembly by sliding it onto the support bar as illustrated above.

Setting up the Grinder...

Please read the section entitled Identification and Description of Parts, in order for you to understand the terminology that we will use, so that you may better understand the working and capability of your grinder. Keep this manual to hand for reference for any other personnel that may be required to use the grinder.

Having assembled all the grinder attachments loosely, the machine now has to be set up correctly and all the attachments securely fastened.

Place the grinder on a flat level surface.

Position the tool rest leaving a gap of approximately one and a half millimetres between the grindstone and the rest, with the rest horizontal (preferably) tighten the star nut securely. (See fig 4)

Remember to adjust the tool rest as the grindstone wears down.

Adjust the spark guard until it is just clear of the grindstone; fasten the fixing bolt securely. (See fig 5)

Remember to adjust the spark guard as the grindstone wears down.

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Setting up the Grinder...

Fig 4

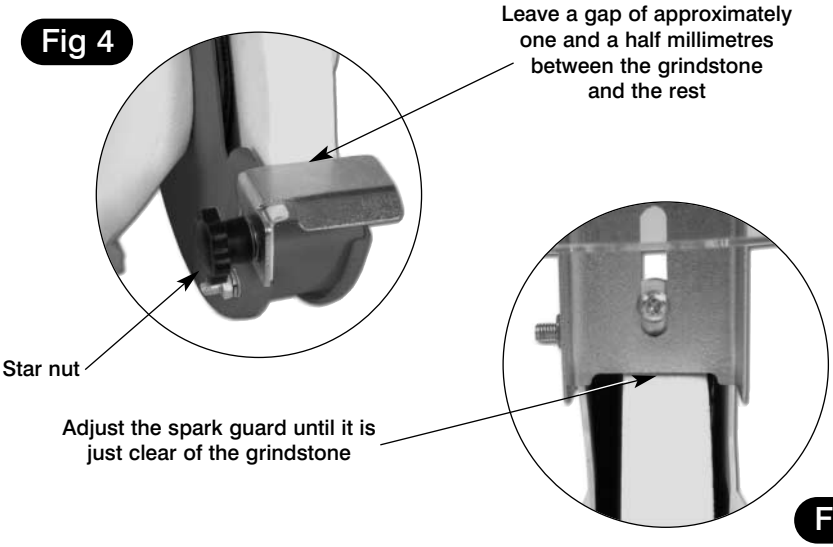

Leave a gap of approximately one and a half millimetres between the grindstone and the rest
Star nut
Adjust the spark guard until it is just clear of the grindstone

Fig 5

Position the eye shield on its pivot bolt, (if necessary, 'nip' the clamping bolt of the eye shield clamp so that the eye shield remains in place).

If there is any tendency for the grinder to move, tip or tilt while it is being operated, it should be bolted down; either to the bench or to a specific stand or base board.
It is a good idea to dress new grindstones before use, to remove any possible irregularities, and ensure the stones are running concentrically.

Carry out a final check e.g. start the machine, check it runs smoothly. Check that the spark guard is adjusted down to the stone, check the gap between the tool rest and the stone is correct, check the stone is not badly deformed (rounded edges, grooved face, etc; unless you have specifically shaped the stone to these profiles)check the eye shield is correctly positioned. Have a cooling pot to hand if you need it, and remember safety goggles are a good investment. (you are only issued with 1 pair of eyes).

Finally, fill the water trough with clean water to a level about 15-20 mm below the lower lip of the trough.

NOTE. The Wetstone will shed the grinding waste and dust into the water; the heavy waste is not a problem as it will sink to the bottom of the trough, the dust and 'light stuff' will form a film on the surface of the water and can be dragged up and lay on the stone. A sufficiently heavy layer can be 'glazed' onto the stone by the grinding action, which reduces its cutting efficiency. The 'heavy' waste which sinks to the bottom of the trough, can also start to rust, due to the oxygenated nature of the water, (air trapped in the surface water on the stone, being passed through the trough as it rotates). Clean the trough and refill with clean water frequently.

Setting up the Tool Jig...

Having assembled the tool jig, it is important when sharpening plane irons or bevel edge chisels that they are angled correctly.

Please note the pictures below show a plane iron correctly angled and ready to be sharpened

Undo the tool clamping knob on top of the jig assembly. (See fig 6)

Insert the tool through the tool jig with the blade facing down, adjust until the blade is flush against the stone and retighten the clamping knob. See figs 7,8,9)

Fig 6

Undo the clamping knob counter-clockwise

Fig 7

Insert the plane iron through the tool jig and align until the blade is flush against the stone. Retighten the clamping knob.

Fig 8

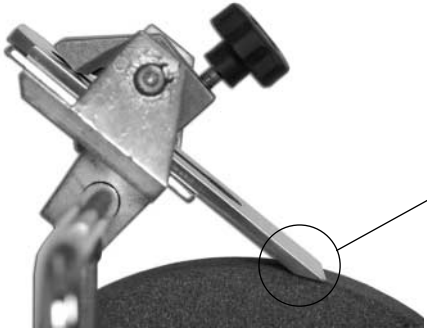


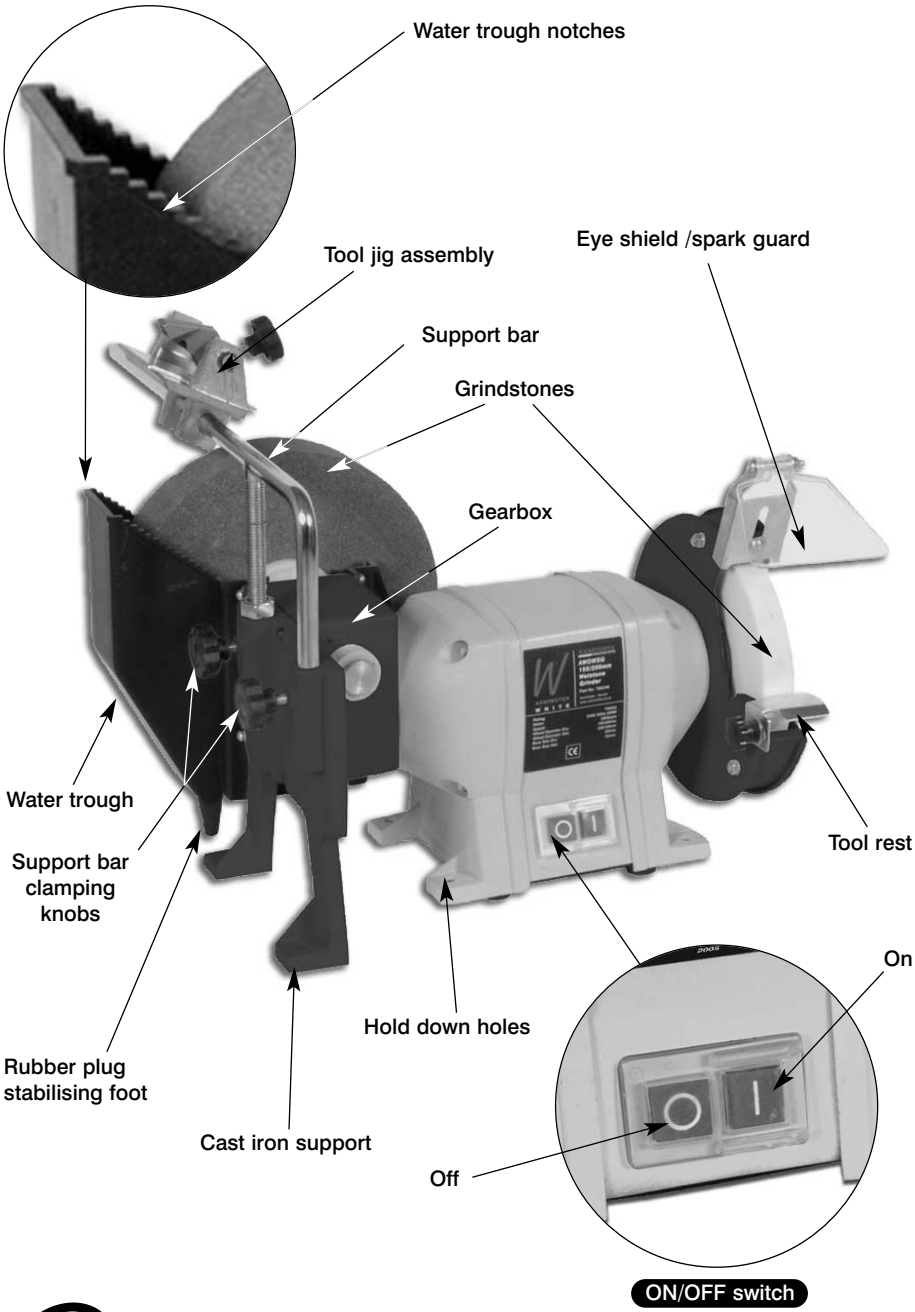
Fig 9

Align the blade until it is flush against the stone.

Specification...

Axminster No.	**AWDWSG (700249)**
Motor	**240V 50Hz 250W**
Dry Wheel Size	**150 dia, 20mm wide 12.7mm bore (uses bushes to reduce to 12.7mm)**
Wet Wheel Size	**200 dia, 40mm wide 20mm bore (uses bushes to reduce to 12mm)**
Speed (Dry Stone)	**2950rpm**
Speed (Wet Stone)	**134rpm**
Footprint (Fully Assembled)	**250mm High x 410mm Wide x 320mm Deep**
Hold Down Holes (8mm) Fixing Centres	**155mm x 100mm**
Weight	**10 Kgs**

Grinder Illustration and parts Description...



Identification and Description of the Grinder...

Grinding machine Essentially a double ended motor, with a mounting base, the motor flanges mount the wheel guard at the dry stone end and the transition gearbox at the wet stone end. The motor base contains the On/Off NVR switch.

Wheel guard A formed metal guard that encloses the grinding wheel. It is formed in three parts. The inner part is mounted onto the motor flange, The stone cover is 'sprung' into the lip of the inner part and the outer part is located on it. The whole assembly is bolted together. There are various 'hard point locations' that accept the fixing bolts that secure the attachments of the machine.

Tool rest Formed metal plate that bolts onto a hard point on the inside cover of the wheel guard. There is an elongated slot in the rest which gives adjustment along the coach bolt fixing.

Eye shield/ spark guard Clear protective shield that mounts over the grindstone to afford a view of the workpiece, but offer protection for the eyes; it is mounted onto the spark guard making a complete assembly that bolts through a hard point on the upper part of the stone cover. The spark guard itself has an elongated slot to allow positioning and adjustment as the wheel diameter decreases. Its' function is to contain any material (esp.sparks) that would be tracked around the grindstone and sprayed out of the machine esp. over the hands.

Gearbox A transition (through 90˚) gearbox that is mounted onto the end flange of the motor. The gearbox reduces the speed of the wet stone to approx. 120 rpm.

Water trough An moulded plastic trough that is screwed to the o/p face of the gearbox. During operation the trough is filled with water, and the stone runs partially immersed., This self dousing action maintains the 'cold temperature' of the stone and helps to remove the grinding waste from the face of the stone. There are a number of preformed notches in the lip of the trough that can be used to rest/steady objects being offered up to the stone. (See page 11) There is a shaped rubber plug, which also acts as a stabilising support for the grinder as well as blocking the drain hole. (See fig 3)

ON/OFF switch A NVR double button switch panel, marked 'I' for On and 'O' for Off. The NVR function ensures the machine will not be left in the 'ON' condition, in the event of a power failure, and subsequent re-establishment of the supply.

Hold down holes Six 8mm holes set in a matrix in the corner flanges of the chassis to enable the grinder to be bolted down to the bench or a stand.

Tool Jig assembly The tool Jig assembly consists of three parts; the cast iron support, support bar and tool jig. The cast iron support has two clamping knobs to allow the mounting bar to be raised or lowered. The steel support bar has an adjustable nut to set the desired height required. The tool jig slides onto the support bar, where a clamping knob on top of the jig assembly clamps a plane iron or bevel edge chisel and keeps the blade square to the surface of the stone, ensuring a square edge to your tool.

Specific Safety Precautions for Grinding Machines

1. **DO NOT** operate your machine until it is completely assembled and installed according to the instructions.

2 . If you are not familiar with the operation of grinding machines obtain advice from your supervisor or instructor or another qualified person.

3. Only use dry grinding wheels or attachments rated higher than 3600 rpm with a 5/8"(16mm) arbor on this machine.

4. **NEVER** use a chipped or cracked wheel. Always inspect each wheel before mounting it on the grinder. If, during inspection you discover a damaged grinding wheel; replace it immediately.

5. **DO NOT** over tighten the wheel nut.

6. Always maintain a distance of 2mm or less between the wheel and the tool rest. Adjust the tool rest as the wheel decreases in size.

7. Ensure the tool rest is tightened so it cannot move while in use.

8. **NEVER** grind on a cold wheel. The grinder should always be run for at least one minute before applying work to it.

9. **NEVER** grind on the side of the wheel. Always grind on the face of the wheel only.

10. **NEVER** apply coolant directly to a dry grinding wheel, it may cause the bonding to fail. If the work piece becomes hot, dip it into the water trough to cool it down.

11. **HOT SPARKS ARE A HAZARD! NEVER** carry out grinding operations near flammable gas or liquid.

12. Always make sure the spark guard and eye shield is in place, that they are properly adjusted and secured.

13. Keep the sparks guard close to the wheel and re-adjust it as the wheel wears.

14. Ensure the soft washer and the flanges furnished with the grinder, are used to mount any attachments (grinding wheels, wire brushes, buffing wheels, etc) onto the shaft.

15. Always stand to one side of the grinder when starting the machine.

16. Avoid awkward hand positions where a sudden slip could cause the hands to come into contact with a grinding wheel, wire brush etc.

17. If the wheel requires dressing, dress only the front of the wheel, do not dress the sides.

18. **DO NOT** use any attachments that causes the machine to vibrate. If after changing grinding wheels or adding attachments, the machine does vibrate; remove the recently replaced item and change again.

19. Grinding creates heat. **DO NOT** touch the work face of the work piece until you are sure it has cooled down sufficiently.

Changing the dry grinding wheel...

Ensure that the grinder is disconnected from the mains supply.

Undo the nuts and bolts that secure the outer shell of the wheel guard to the inner shell. Remove the outer shell and place it and the nuts, bolts and washers carefully aside. (See fig 10)

WARNING!!

Be very careful that the stone cover does not 'spring' out of its location lip on the inner cover, it can spring out with some force. (See fig 11)

Fig 10

Fig 11

Loosen the nut holding the grinding wheel to the shaft. Carefully remove the nut, the plate flange and the soft washer that is clamping the grindstone in place. (see figs 12 &13). Then, very carefully remove the grindstone from the shaft, take care that no damage or distortion is done to the bush (if one is fitted)(See fig 14).

Now is a good time to clean out the interior of the wheel guard, removing any loose or compacted material that may have accumulated. Carefully inspect the new grinding wheel before it is fitted, check that there are no cracks, and there is no damage to either the front face or the edges. If required, fit the bush to the grindstone. Carefully mount the grindstone onto the shaft, reposition the soft washer and the wheel flange, replace the holding nut and tighten carefully.

Do Not Overtighten. Refit the outside shell of the wheel guard and secure with its nuts and bolts. Refit the tool rest, positioning as in "Setting up the grinder". Fasten securely.

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Changing the dry grinding wheel...

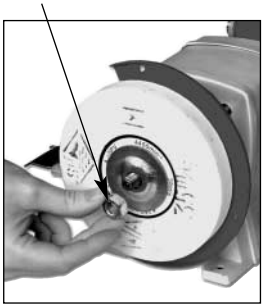

Fig 12

Fig 13

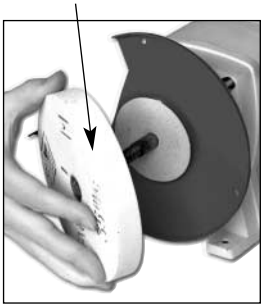

Fig 14

Check that the spark guard and the tool rest are not touching the grindstone. Reconnect the grinder to the mains supply, give the grinder a 'short burst', by switching it on and off quickly. Check the grinder is not subject to any undue vibration. If the grinder does vibrate, strip it down again and check that the bush (if fitted) is correctly positioned and is the correct size for the stone and the spindle. Check the bore of the stone is correct. If these all seem correct, refit and carry out the 'quick burst' procedure again. If the machine is still vibrating, discard the stone and replace with another one. Run up to speed normally. Leave the machine running for at least one minute before carrying out any work. Apply a workpiece and check that the spark guard is correctly positioned and that the tool rest is securely fixed.

Changing the wet grinding wheel...

DISCONNECT THE GRINDER FROM THE MAINS SUPPLY

1. Remove the rubber stabilising foot (See fig 3).

2. Drain the water from the trough.

3. Release the four screws that secures the tool jig cast iron support to the gearbox and put carefully aside (See figs 15 & 16).

4. Release the remaining screws that secures the trough to the gearbox (See figs 17 & 18).

5. Remove the trough and stand the grinder upright (See figs 19 & 20).

6. Undo the nut, (fig 21) and remove the wheel flange (fig 22) and the stone (fig 23).

NOTE. Take care removing the flange or the stone from the flange as the flanges form the bushing to size the grindstone bore to the gearbox shaft (See fig 23).

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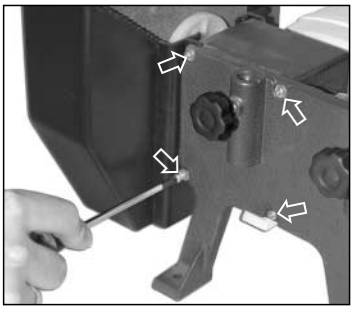
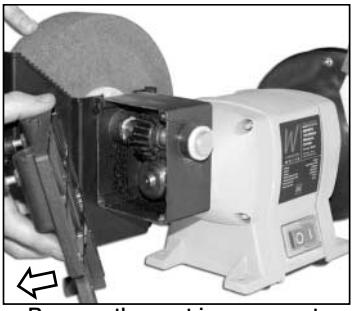
Fig 15



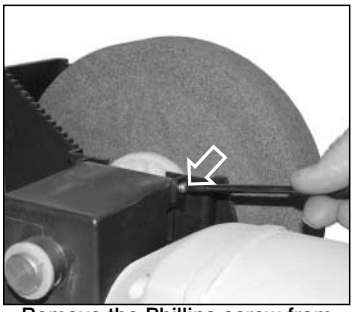
Unscrew the four Phillips screws.

Fig 16



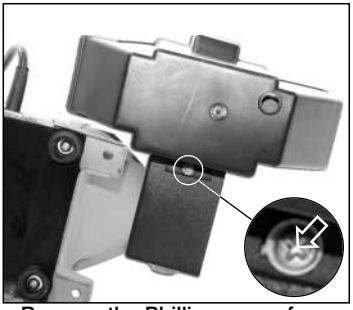
Remove the cast iron support.

Fig 17



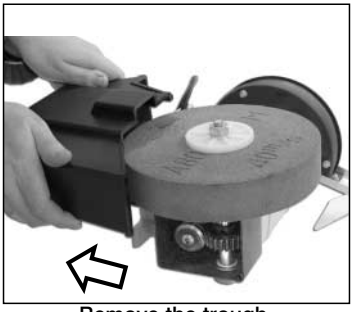
Remove the Phillips screw from the side of the gearbox.

Fig 18



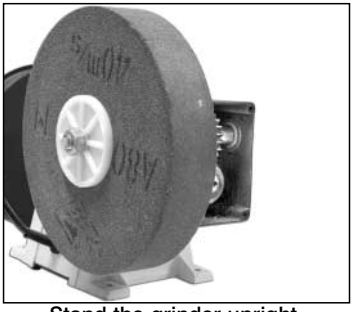
Remove the Phillips screw from beneath the trough.

Fig 19



Remove the trough.

Fig 20



Stand the grinder upright.

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Changing the wet grinding wheel...

Nut

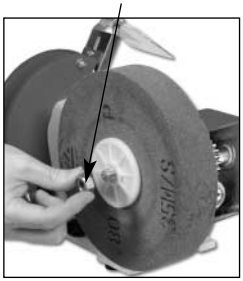

Fig 21

Plate flange

Fig 22

Grindstone

Fig 23

Now is a good time to clean the water trough thoroughly, and check for, and correct any signs of erosion/oxidation on the gearbox components. Fit the new stone and re-assemble in reverse order. Take care not to over-tighten the securing screws, as damage could result to the fixing lugs of the water trough. Replace the bung/leg and refill the trough with clean water.

Dressing a stone...

⚠ If the grindstones wear unevenly, producing crests, dips or rounded edges, they should be dressed out using a suitable wheel dressing tool. (A selection of stone dressing tools are available in the Axminster catalogue.)

Switch the grinder on and allow it to run for at least one minute. Rest the dressing tool on the tool rest and advance it to the stone until it touches the maximum diameter; gently move the dresser back and forth across the face of the stone until all irregularities have been removed and the edges of the stone are nice and sharp.

Dressing the wheel using a Wheel Dressing Stick or Devil Stone
Part no. 410074

⚠ **PLEASE NOTE**

This is not a procedure that can be rushed, it must be carried out slowly and steadily.

AWDWSG Wetstone Grinder

700249

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